

Hawley's Condensed Chemical Dictionary

ELEVENTH EDITION

Revised by

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and
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3-10% zinc, the solid
luble in acetone. Com-

xide or hydroxide and
itation from mixture
sodium naphthenate.
it in paints, varnishes,
e, and mildew preven-
waterproofing textiles,

-6.

or crystals, soluble in
55 (13C), mp 36.4C,
ion between 105 and

acid on zinc or zinc

explosion risk, strong

oagulant, reagent, in-

pylate.

exoate).

red, viscous liquid; d
luble in hydrocarbon

tan, greasy, granular
5% zinc; mp 70C; so-
bon disulfide, ligroin;
stible.

lutions of zinc acetate
fusion of zinc oxide

ishes (drier).

oxy-2'-hydroxy-5'-

ination of zinc and

: arsenate.

nc phosphate.

silicate.

2.

soluble in acids and
water, d 2.562 (24C),
mbustible.

Derivation: Interaction of zinc sulfate and sodium
oxalate.

Use: Zinc oxide, organic synthesis.

zinc oxide. (Chinese white; zinc white).

CAS: 1314-13-2. ZnO .

Properties: Coarse white or grayish powder, odor-
less, bitter taste, absorbs carbon dioxide from
the air, has greatest UV absorption of all com-
mercial pigments, d 5.47, mp 1975C, soluble in
acids and alkalis, insoluble in water and alcohol.
Noncombustible.

Derivation: (a) Oxidation of vaporized pure zinc
(French process), (b) roasting of zinc oxide ore
(franklinite) with coal and subsequent oxidation
with air, (c) similar treatment starting with other
ores, (d) oxidation of vapor-fractionated die cast-
ings.

Grade: American process, lead-free; French pro-
cess, lead-free, green seal, red seal, white seal
(according to fineness); leaded (white lead sul-
fate); USP; single crystals.

Hazard: zinc oxide fume is harmful by inhalation.
Zinc oxide powder reacts violently with chlori-
nated rubber at 215C. TLV (fume): 5 mg/m³
in air.

Use: Accelerator activator, pigment and reinforc-
ing agent in rubber, ointments, pigment and
mold-growth inhibitor in paints, UV absorber
in plastics, ceramics, floor tile, glass, zinc salts,
feed additive, dietary supplement, seed treat-
ment, cosmetics, photoconductor in office copy-
ing machines and in color photography, piezo-
electric devices, artists' colorant.

zinc oxychloride. A saturated solution of zinc
chloride and zinc oxide.

Use: Dentistry.

zinc palmitate. $\text{Zn}(\text{C}_{16}\text{H}_{31}\text{O}_2)_2$.

Properties: White, amorphous powder; d 1.121;
mp 100C; insoluble in water and alcohol; slightly
soluble in benzene and toluene. Combustible.

Use: Flatting agent in lacquer, pigment suspending
agent for paints, rubber compounding, lubricant
in plastics.

zinc perborate. $\text{Zn}(\text{BO}_3)_2$ with water of hydra-
tion.

Properties: Amorphous white powder, insoluble
in water but slowly decomposed by it, liberating
hydrogen peroxide.

Derivation: Interaction of sodium peroxide, boric
acid, and zinc salt, or of boric acid and zinc
peroxide.

Hazard: Fire risk when wet, in contact with or-
ganic materials.

Use: Medicine, oxidizing agent.

zinc permanganate. CAS: 23414-72-4.

$\text{Zn}(\text{MnO}_4)_2 \cdot 6\text{HOH}$.

Properties: Violet-brown or black, hygroscopic
crystals, d 2.47, loses 5HOH at 100C, decom-
poses on exposure to light and air, soluble in
water and acids, decomposes in alcohol.

Grade: Technical (95% pure).

Hazard: Dangerous fire risk in contact with or-
ganic materials, strong oxidizing agent.

Use: Oxidizing agent, medicine (antiseptic).

zinc peroxide. (zinc dioxide).

CAS: 1314-22-3. ZnO_2 .

Properties: White powder containing 45-60%
 ZnO_2 , balance ZnO ; d 1.571; decomposes rapidly
above 150C; decomposes in acids, alcohol, ace-
tone; insoluble in water but decomposed by it.
Derivation: Action of barium peroxide on zinc
sulfate solution, followed by filtration.

Grade: USP (mixture of peroxide, carbonate, and
hydroxide), technical 50-60%.

Hazard: Severe explosion risk when heated; explo-
sive range 190-212C. Fire risk in contact with
organic materials; strong oxidizing agent.

Use: Curative for rubber and elastomers, pharma-
ceuticals, high-temperature oxidation.

zinc phenate. (zinc carbolate; zinc phenolate).

$\text{Zn}(\text{C}_6\text{H}_5\text{O})_2$. (May be only a mixture of zinc
oxide and phenol).

Properties: White powder, soluble in alcohol,
slightly soluble in water. Combustible.

Derivation: By heating zinc hydroxide with phenol
and extracting with alcohol.

Hazard: Toxic by ingestion.

Use: Insecticide.

zinc-1,4-phenolsulfonate. (zinc sulfophenate; zinc
sulfocarbolate). CAS: 127-82-2.

$\text{Zn}(\text{SO}_3\text{C}_6\text{H}_4\text{OH})_2 \cdot 8\text{HOH}$.

Properties: Colorless, transparent crystals or white
granular powder; odorless; astringent metallic
taste; effloresces in air; turns pink on exposure
to air and light; loses water of crystallization
at 120C; soluble in water and alcohol.

Derivation: By heating zinc hydroxide with p-phe-
nolsulfonic acid.

Grade: Technical.

Hazard: Toxic by ingestion.

Use: Insecticide, medicine (antiseptic).

zinc phosphate. (zinc orthophosphate; zinc phos-
phate, tribasic). CAS: 7779-90-0.

$\text{Zn}_3(\text{PO}_4)_2$.

Properties: White powder, soluble in acids and
ammonium hydroxide, insoluble in water, d
3.998 (15C), mp 900C.

Derivation: Interaction of zinc sulfate and tri-
sodium phosphate.

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